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# AGRICULTURAL ENGINEERING

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## CURRENT LITERATURE

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Agricultural Bulletin. Third Quarter.

Summer 1931.

Trench silo. p.24, 40-41.

Agricultural Engineering.

Vol.12, no.5.

May 1931.

Tests on resistance to passage of air through rough rice in deep bin. By E.J.Stirniman, G.P.Bodnar, and E.N.Bates. p.145-8. Purpose of experiments was to determine resistance to passage of air offered by columns of rice of varying depths. These data should provide practical information to designers of grain driers and ventilated bins for drying and aeration of rough rice by forced draft. It is hoped that, with those data, designing engineer may be able to select more accurately proper fan and fan speed for any particular condition. Apparatus used in experiments included circular bin, motor-driven fan, platform scale, and instruments for measuring and controlling pressure and volume of air delivered to bin.

Present status of machine milking. By Lee C.Prickett. p.151-5.

Discusses pipe line machines, drive rod machines, portable milkers, relay milkers, combine milkers, installation, care and operation of milkers.

Advantages and disadvantages of electric brooders. By J.E.Dougherty. p.157-60.

Economic factors in farm electrification. By Ben D. Moses. p.161-2.



Preliminary trials of a new type of mower. By Roy Bainer. p. 165-6.

Machine had platform, cutter box, reel and draper very similar to those found on ordinary grain binder. Brushes fastened to every other reel slat kept cutter box clean for all lengths of hay. At end of platform and slightly elevated two rubber-covered steel rollers 10 inches in diameter were mounted with axes parallel to platform rollers. Lower roller was held rigidly in place while upper roller floated under tension provided by two 2,000-pound springs; one at each end of the roller. Two revolving brushes or doffers tended to keep rolls free of any crushed hay that might have tendency to stick and carry back. Set of eight steel fingers held by cross piece, which was parallel with rollers, aided spreading the hay out as it left the rolls. All of hay cut by sickle fell on draper and was carried to rolls. Rolls provided by spring tensions crushed stems, thus exposing internal moisture to more rapid removal by evaporation from natural causes.

Results of a garden tractor survey. By Gerald J. Stout. p. 169-70

Agricultural Engineering. Vol. 12. No. 7. July 1931.

The dynamic properties of soil. 1. An explanation of the dynamic properties of soils by means of colloidal films. By M.L. Nichols. p. 259-64.

Present status of mechanical corn picking. By A. L. Young. p. 267-70.

Machines are far from standardized, although essential mechanism of later models is much the same as that of earlier machines. Changes are still being made in shape, size, position and arrangement of gatherers, snapping rolls and husking rolls. Gears, sprockets and chains are being made of better materials, and in some cases given better protection. Gatherer chains and snapping rolls are being carried closer to ground to permit better picking up of lodged corn. Top sheets of gatherers have been widened and made more rounding; sharp edges and corners likely to break stalks or in which ears can catch are being eliminated. Floating gatherer points get beneath and raise even very badly lodged stalks. Pieces of stalks pinched off by snapping rolls are taken out at upper end of snapped ear elevators, any ears still attached being snapped off. Ear retarders and straighteners over husking rolls increase their effectiveness. Safety slip clutches at various places protect against breakage in case of clogging. Simple hitches allow wagon in which corn is placed to be pulled by tractor, and changing of wagons is done quickly and easily.



Some observations on hammer type feed grinders. By William Vutz.  
p. 271-4.

Data given for smaller mills can in many instances be applied to larger ones. Handling of roughage and ear corn can best be done with large hammer mills and sufficient power to carry peak loads. Two different trends generally followed. Both trends use swinging as well as rigid or semi-rigid types of hammers. One trend is to increase cylinder diameter to try to make it possible to drive mill with any farm tractor of standard belt speed, without necessity of changing tractor pulley. This usually results in driven pulley on hammer mill of  $3\frac{1}{2}$  to 5 inches diameter, which is not practical size to use to transmit power by means of large belt. Other is to use cylinder of smaller diameter and attain the necessary speed by means of speed jack. This speed jack is means to more positive action of tractor and engine belt on driven pulleys because of diameter that is practical.

Design of grain storage structures. By J. D. Long. p. 274-5.

Development of a corn combine. By C. A. Logan. p. 277-8.

Irrigation in western Oregon. By M.R. Lewis and Arthur Kind. p.279-82.

Two factors probably account for relatively rapid spread of practice in recent years in this section. One is uniform dryness of summers, and second is proximity of areas that normally are irrigated.

New bureau swings into action. Bureau of Agricultural Engineering. p.289.

ASA Bulletin, No. 62, June 1931.

Russian program for standardization and elimination of waste  
By D. G. Budnevich.

The American Thresherman, Vol. 34, No. 2 June 1931.

Mechanization of agriculture. By E. W. Hamilton. p. 6, 7, 23.

"Mechanization of agriculture" is new term that has been applied to development that has been going on in agricultural industry for more than half a century. Slowly but surely various parts that go to make up complete whole have been developed to point where it has claimed attention of banker, professor, economist, government official, business man, and thinking farmer. Of a sudden mechanized farm had become a practical reality. Future farm will be a mechanized farm, and it will not only be tractorized but in many cases it will be electrified as well. Young man of today who desires to become one of our future farmers must look beyond his own few acres, keeping in mind idea of mechanization wherever and whenever possible in order to cut production costs and save man power.



Eastern Canada studies the combine. By E. C. Webb. p.9.

Combine presents one of greatest known methods of cutting cost of production, and wide-awake farmers everywhere are going to find ways and means of using it. Chief among these advantages is possibility of lengthening actual operating season of machine. Another advantage which presents itself is field for custom harvesting.

Broom corn speedily gathered. p.22-3.

Invention of I.A.Grabeel. Cuts brush, removes boot, and loads it on trailer. There is drag or arch that drags higher heads to level with lower, power coming from wheels of machine as drawn by horses. Heads being brought down by drag are caught by broom corn seeder chain which holds brush as stems are cut by going between disk and roller. Disk is set so it cuts stem and not boot. Motion of machine pulls stem from boot. Another device disengages brush from seeder and drops it on belt which runs brush into trailer. Machine covers from 12 to 15 acres a day and is operated by three men and three horses. It is one-row machine and weighs about 600 pounds.

American Thresherman, Vol. 34, no.3. July 1931.

Mill comes to your farm. By Dusty Miller. p.4-5.

Killing weeds with power. By F.W.Duffee. p.6-7,22,23.

Three important phases in tackling weed control problem. First is to sow clean seed, thus reducing spread of weeds in so far as possible. Second is cultivation and third is use of chemicals in controlling weeds that are already in field.

Cutting the mortality rate of farm tools. By J.C.Patterson. p.10-19.

Average life of farm machines in Iowa--which is probably typical of nation--is 15.2 years. Spring tooth harrow was found to be shortest-lived, lasting only eight years. Farm wagon lasts longest, 24 years. Tractors were found to last slightly more than eight years.



Falkiner cane harvester. p.123.

First time in history of sugar industry cane crop is being taken off this season by use of mechanical harvesters. Up to 1929, one of most obstinate difficulties encountered by builders of harvesting machines was that of topping cane at exactly right point. In 1930, model of Falkiner harvester, this problem was eliminated by incorporating device for cutting entire stalk into short lengths and passing these through cylindrical chamber from which strong current of air carries off light material, including leaves, tops and trash, and spreads it over ground from which cane has been cut, while sections of cut up stalks are conveyed by elevator to truck or tractor-drawn cart travelling alongside harvester. Another departure from earlier practice in designing recent models of harvester is equipment of machine with broad fender which pushes standing cane forward to angle of about 45 degrees before stalk is severed, at or slightly below surface, by revolving disc knives. Butts of stalks are seized by revolving fingers of conveying elevators and are drawn into machine. In this way canes that lie flat upon ground, as well as crooked or curving stalks, are cut as efficiently as those that stand upright. Two circular discs placed vertically on outer sides of fender cut any canes that lie horizontally across rows and portions of these stalks left behind on one trip across field are taken up on next trip. Double elevators gather cane and trash and pass it along to chopping knives which cut mass into sections four to six inches in length. These are carried to separating drum, where trash is winnowed out.

Brick & Clay Record. Vol.78, no.12. June 16, 1931.

Brick wall within reach of every pocket book. p.634-7.

Product is slab made of burned clay in same way and of same material as regular face brick. Only difference is in being only one-half inch thick, face remaining same as standard face brick--2 1/4 x 8 inches. Slabs are mounted on insulating board and nailed to wall. New product increases possibilities of clay products industry. Probably half homes built in this country are under \$7,000 and product such as this reaches directly into this field which, at present, is practically closed to solid brick. Its greatest possibilities lie in covering interior walls and in recoating old houses.

Glazed brick colors the future of the industry. p.638-46.

More and more heavy clay products manufacturers, desiring method whereby they can produce ware of various shades and textures with surface which is readily washable, are installing equipment for application of vitreous ceramic glaze to their product. Several methods of decorating ware in this manner may be used including raw and fritted glazes, englobes and everglaze colors, stains and special frits.



Clay Products Institute sets out on path of real service. p. 688 .

Following committees were established: Pavements; Sewers and Drainage; Architectural Facings; Masonry of Solid and Hollow Units; Reinforced Masonry; Permeability and Efflorescence; Weathering; Mortars; Definition and Nomenclature; Building Codes; Standards and Specifications; Editorial.

Bureau of Standards Journal of Research, Vol. 7, No. 1. July 1931.

Soil-corrosion studies, 1930. Rates of corrosion and pitting of bare ferrous specimens. By K.H. Logan and V. A. Grodsky. p. 1-35.

Rates of corrosion appear to vary somewhat from year to year, but general tendency is for rate to decrease as time of exposure increases.

The Country Gentleman, June 1931. Vol. CI, no.6.

Cotton-picker progress: The race to produce the perfect machine. By Dan Scoates. p. 6, 65.

Two methods of attacking mechanical harvesting of cotton. One is picking cotton out of bolls while cotton is still on plant and in this way harvesting only seed cotton. This is type of machine which most of large companies are spending their money on, because their designers feel that it is most satisfactory way of doing this harvesting job. Other method is to strip cotton from plant, and in doing this boll itself is taken off with cotton in it. In stripping process some leaves and trash are also obtained, if there are any on plant. This method has mechanically harvested more cotton than any other type of harvester. Final answer to cotton-harvesting problem must allow cotton farmer to harvest large quantity of cotton without very much additional labor.

Haymakers. National wide interest in dryers. By George W. Kable. p. 16, 74, 76, 78.

Demand for some means to guarantee quality of hay crop has been general. Dryers of ten or twelve different kinds may be found now from coast to coast and from Louisiana to Ontario. Louisiana has four Wisconsin three, and New Jersey and Texas each two. At least one dryer is also being used in each of states of New York, Pennsylvania, Maryland, Delaware, Florida, Alabama, Tennessee, Illinois and California.

Domestic Engineering. May 2, 1931. Vol. 135, no.3.

Oil burners face new competition. By A. H. Senner. p. 45-7, 149-50.



Find new use for unit heaters in warm air jobs. p. 32-4, 141.

Heating contractors have discovered rich sales possibilities in applying steam unit heaters to thousands of warm air heating plants now in use. Basically, these means consist of adapting unit heater to existing ductwork of warm air installation with consequent elimination of part if not all of furnace.

Humidity in the home. By S. M. Anderson. p. 43-6.

Single and double glass window separating inside warm air of house from outside air, at temperature of 0 F. Temperature inside window in each case is purposely chosen at 72 F, representing temperature to be desired, though not necessarily temperature of greatest comfort unless relative humidity of 50 per cent is maintained within room. Humidity control apparatus used involves use of photo-electric cell. This control functions only as deposit of moisture is made on transparent medium--such as either a single or double glass window. It consists fundamentally of source of light and lens creating beam of light which shines through window and is reflected by mirror upon photoelectric cell which is sensitive to intensity of light falling upon it. When window glass is clear, full intensity of light from light source passes through glass and falls upon photo-electric cell, causing it to operate, through amplifying tube and control relay, particular type of humidifying apparatus to which it may be connected. As soon as condensate begins to form on that portion of window through which light is shining on its reflected course to photo-electric cell, portion of light is diffused beyond field of action of cell by drops of water collected on glass. This causes reduction in intensity of light falling upon cell, which in turn causes control relay to open, shutting down humidity supply apparatus until window pane is again clear.

The Electric Journal, July 1931. Vol. 28, no. 7.

Automatic arc-welding: Its advantages and limitations. By A.M. Candy. p. 415-17.

Electricity on the farm, June 1931. Vol. 4, no. 6.

Truing and filing a crosscut handsaw. By L. M. Roehl. p. 19, 20-2.

Engineering News Record, June 11, 1931. Vol. 106, no. 24.

Composition of earth dams. Discussion: Part I. p. 960-6.

Further study of earth dams and better terminology needed.

By J. Albert Holmes.

Materials in existing earth dams. By E. W. Lane

Laboratory tests can never supplant sound judgment. By O.N. Floyd.

Graduation of materials in earth dams an important factor.

By Chas. H. Paul. Editorial, p. 957.



First floodflow experiments of Vicksburg Hydraulic Laboratory. New U.S. waterways experiment station at Vicksburg, Miss., announces results of tests on overflow erosion and backwater limits. p. 970.

Reports issued gives results of experiments to determine: (1) erosion that would result from flow of floodwater over railway embankments; and (2) limit of backwater influence in Illinois River. Editorial, p.957.

Precast asphaltic sewer joints solve wet trench problems. By E.French Chase. p. 966-7.

Sewer joints of asphaltic rings precast in bell and on spigot of pipe recently were used with marked success in city of Seattle for intercepting sewer where extreme groundwater conditions in clay and quicksand formation on pumping line made effective joints of extreme importance.

Inflows block construction of aqueduct tunnel for Athens, Greece. By R. K. Keays. p. 978-81.

Nine-mile water-supply tunnel diverted to avoid dangerous ground after long fight against squeezing, flooding and plugging. Project includes: (1) the Marathon dam, marble-faced monumental masonry structure of gravity section 177 ft. high; (2) reservoir, impounding 41,000,000 cu.m.; (3) Boyati tunnel aqueduct through long low saddle between Parnes and Pontelikon mountain masses; (4) control works at Boyati south portal delivering to Halidonou tunnel aqueduct, which, including short Kokinara aqueduct bridge, is 1.55 miles long; (5) a cast-iron inverted siphon 36 in. in diameter and  $3\frac{1}{2}$  miles long; and (6) filter plant and reservoir for Athens and Piraeus.

Water purification ascedant: Editorial. p. 995-6.

New Mississippi problem: Editorial. p. 997.

In brief, question to be answered is: Admitting what army engineers assert, that present plan is best that can be devised to cost \$325,000,000, is it best if twice or three times that amount has to be invested to provide effective protection? Regardless of any fault of planning or merit of detail in present plan, legitimate charge of neglect lies against Congress and its engineering advisers for failure to determine and state clearly economics of flood control on lower Mississippi River.

Design and construction of two new reclamation dams. p. 998-1002.

Gibson concrete-arch dam and the Echo earthfill dam on government irrigation works--Tunnel and channel spillways--Elaborate equipment for testing pressure, temperature and seepage in concrete dam.



Village flood protection. East Peoria protects itself against destructive floods of Farm Creek by channel works at cost of \$1,200,000.

By Jacob A. Harman. 1042-3.

That flood-protection measures may be economically practicable for small communities, as well as for large cities and for vast and spectacular projects like those of Mississippi River and its tributaries, is well illustrated by the works protecting East Peoria, a village of 5,000. Small tributary of Illinois River has flooded the district to depths of 3 to 10 ft. In one year alone damage was estimated at nearly \$2,000,000. New works, providing permanent relief, will cost considerably less than this.

Composition of earth dams. Discussion: Part II. p. 1044-8.

Character of available material fixes core dimensions. By Albert S. Crane.

Slides during construction are not due to core pressure. By Frank H. Cothran.

Major Settlement of dam cores occurs during construction. By A.C. Eaton.

Bureau of Standards studies water penetration through brick walls. p. 1060.

Results show that when interior walls of brick buildings become wet during rain it is likely that water has entered through open spaces between brick and mortar rather than directly through these solid materials.

Water softening plant employs pumped recirculation for chemical mixing.

By. Harry N. Jonks. p. 1061-3.

Aerator combines actions of cascade and flowing stream--softened water recarbonated prior to final sedimentation--filter gages electrically operated.

Sixteen years' operation of Cheltenham Sewage-Works. p 8,9.

Irrigation in Java. By Harold E. Babbitt. p. 13-16.

Modern Heavy-service Dipper-dredge Design. By O. P. Erickson. p. 17-19.

Hull, spud and crane structure and steam, diesel and electric power plants are products of most advanced marine engineering practice.

Developments in materials and testing. p. 22-6.

Chicago meeting of A.S.T.M. distinguished by first exhibit of testing equipment. Papers on effect of high temperatures on properties of metals. Malleable iron castings, abrasion testing of rubber, weathering resistance of masonry materials. Corrosion testing, fatigue of metals and observations on concrete. Editorial p.1.



Three types of design used in California flood-control dam. By Ralph G. Wadsworth. p.46-9.

Variable-radius arch, straight and curved gravity sections and earth-fill employed in Hogan Dam on Calaveras River. Hogan Dam, recently built by city of Stockton, Calif., is first major flood-control structure on Pacific Coast north of southern California region. It is 137 ft. high above lowest foundation and embraces three separate types of construction: variable-radius arch with massive gravity-abutments, rolled earthfill, and standard gravity sections, both straight and curved. Resulting flood-retention reservoir has capacity of 76,000 acre-ft. at elevation of overflow crest and is used at present entirely for flood control.

Sludge disposal at sewage irrigation farm. By George A. Mitchell. p.57.

Concrete lining for irrigation canals in Texas. By A.J. Moore. p.60-1.

Engineering News Record. July 16, 1931. Vol. 107, no.3,

Application of model research to Mississippi flood problems. By Herbert D. Vogel. p.84-8.

Plant of U.S. Waterways experiment station at Vicksburg, Miss. Organization for experimental work. Model studies of backwater, cutoffs, embankment overflow and slackwater navigation dams summarized. Editorial p.82.

Earth slips and subsidences from underground erosion. By Karl Terzaghi. p.90-2.

Action of underground erosion as disclosed by Memphis landslide considered as a possible cause of Corpus Christi dam failure. If ground below dam or natural barrier to impounded water contains layers or zones more permeable than surrounding soils, they become seats of intense groundwater currents, because lines of flow are drawn toward these zones somewhat as lines of force are drawn toward strip of iron in magnetic field. Physical action is as follows: starting at point where zone of weakness opens into free drainage, erosion works backward into groundwater carrier, scours cavity in permeable stratum and ultimately brings about collapse of roof of cave. These statements epitomize theory and action of underground erosion, which has caused many landslips and subsidences. Editorial p.82.

Water development provides main theme for civil engineers at Tacoma meeting. p.103-5.

Columbia river problems, irrigation and four hydro-electric projects occupy half of technical program--Structural and city planning division meet.



Opportunities for engineering research in agriculture. By R.W. Trullinger. p.1-8.

Agricultural engineering consists of application of civil, mechanical, electrical, and chemical engineering principles and certain physical and physicochemical phenomena to agricultural operations and practices. Its purpose is to introduce efficiency and economy into agricultural industry.

Farm and Ranch, Vol. 50. No. 20. May 16, 1931.

Mechanical harvesting of cotton progresses. By H.P. Smith. p.2, 10.  
Devices that are now being used for mechanical harvesting of cotton can be divided into two distinct divisions; first, those devices that strip cotton from plants either before or after frost; and second, machines designed to gather open cotton at any time during season without injury to rest of plant.

Farm and Ranch, Vol. 50, No. 22. May 30, 1931.

Farms terraces with two-row implements: Oklahoma gains land and saves labor by terracing in Harmon County. p. 6.

Farm Implement News, Vol. 52, No. 23. June 4, 1931.

Combine harvester-thresher troubles and remedies. By G.W. McCuen and E. A. Silver. p. 18-22.  
Takes up cutting, threshing and cleaning troubles. Windrow pick-up method of combining.

Farm Implement News, Vol. 52, No. 25. June 18, 1931.

A. E. Bureau opens July 1. Secretary Hyde selects S.H. McCrory for Chief. p. 8.  
Observations on harvester-stackers. By A. J. Schwantes. p. 16.  
Excerpts .  
Official reports of Nebraska tractor tests. p. 18

Farm Implement News, Vol. 52, No. 27. July 2, 1931.

Schlayer rotary threshing machine. p. 25.  
Separating elements of machine consist essentially of rotary beaters and spirals which knock grain out of straw and convey material to rear in blast that blows out chaff and straw while heavier grain falls to conveyor at bottom from which it is elevated to recleaner and from there to sacker.

Flat rate for tractor repairing. By Frank W. Squire. p. 26-8.



Farm Implement News, Vol. 52, No. 28. July 9, 1931.

25th Annual Meeting of the A.S.A.E. By F.A. Wirt. p. 16-18.

Machine designed to make fields resistant to soil erosion. By L. S. Richardson. p. 20.

Invented by R. H. Davis, soil erosion specialist of U. S. Department of Agriculture.

Farm Implement News, Vol. 52, No. 29. July 16, 1931.

Potato Combines: Editorial. p. 10.

New Bureau of Agricultural Engineering: By S. H. McCrory. p. 14-15.

It will help to solve the problems of the farmer involving his machines, his buildings and his fields.

The Farm Journal, June 1931. Vol. IV, No. 6.

Old barn goes modern. By Grif McKay. p. 20-1.

Concrete, insulation, ventilation and modern equipment have saved many an old barn.

----- July 1931. Vol. IV, No. 7.

Seven-Point poultry houses. By Grif McKay. p. 20-21.

A good house for layers is one that enables flock to make best possible use of feed, and caretaker to make best possible use of time in handling flock.

Farm Machinery and Equipment, No. 1769. May 15, 1931.

Time to push haying equipment: Modern hay tools enable farmers to save time, labor and money in rush season. By E.T. Leavitt. p. 5,6.

Study terraces on erosion farm. p. 16.

----- No. 1770. June 15, 1931.

McCrory heads New Bureau: Importance of Agricultural Engineering recognized by creation of New Bureau in U. S. Department of Agriculture. p. 7.

----- No. 1771. July 15, 1931.

Work of Agricultural Engineer reaches farm homes of nation. p.5, 26.  
"Chief" McCrory outlines problems to be solved by New Bureau.

Manure spreader insures efficient use of valuable fertilizer.  
By E. A. Hunger. p. 10.

The Fertilizer Review, Vol. VI. No. 6. July 1931.

A Bureau of Agricultural Engineering. p. 5.



Fuel Oil Journal, Vol. IX, No. 12. June 1931.

New table of heating values for fuel oils. By J. George Kohl. p. 12, 103-5.

G<sup>o</sup>nie Rural & G<sup>a</sup>rande Revue Agricola. 24<sup>e</sup> annee. May 1931.

Un procede Americain de dessiccation et de mouture des fourrages riches. par M. Jacques Faugeras. p. 26-8.  
(American method of drying and grinding of fodder)

Travaux d'exterieur de la ferme. par M. Louis Patrix. p. 34-6.  
(Outside work on the farm)

La traite des vaches par l'electricite. par J. Engelhard. p. 39, 40.  
(Milking of cows by electricity)

Hardware and Implement Journal, July, 1931. Vol. 36, No. 7.

New cotton harvester exhibited. p. 29.

Demonstration of Hood Cotton Picker invented by J.M. Hood of Colorado, Texas. Offers most practical solution of mechanical cotton harvester problem. Picker is light horse or motor driven, inexpensive spindle type picker. It will sell to farmer for less than \$500 and it weighs less than 1,000 pounds. It has pick capacity of from two to four bales per day.

Heating and Ventilating, June, 1931. Vol. XXVIII, No. 6.

Review of psychrometric charts. By, C.O. Mackey. p. 50-3. (Continued).  
Explains not only how they are used but principles upon which they were used. Reduces labor and chance of error making calculations involving air humidifying and dehumidifying, water cooling, and drying.

The degree day--Its applications and limitations. p. 54-9.  
Describes why it is essentially estimating unit, and analyzes factors, among which are wind, rain and sun, which cause seasonal variation in its accuracy. Some evidence is included tending to show that unit is not appropriate for short-period estimates.

Some temperature studies in radiant heated rooms. By T. Napier Adlam.  
Observations of air temperature distribution in rooms heated by convection and ceiling, floor and side wall radiant heating. p. 69-72.

What thickness insulation? By Paul D. Close. p. 76-82.  
Part I contains Mr. Close's reply to recent discussions of his previous articles. Part II takes up subject of economic thickness of insulation for buildings heated with gas, while Part III is outline of special conditions where insulation is used in place of other materials, and where method of installation is factor.



Proper care of brine aids prevention of corrosion. By R.C. Doremus.  
p. 372-7.

Diagram for gas flow in pipes. By Leonard L. Hohl. p. 393-7.

Bending of curved pipes. By Sabin Crocker. p. 399-403.

Air Conditioning for homes--cooling. By S. M. Anderson. p. 410-13. Same apparatus used for cooling purposes may be adapted to heating-humidifying.

Study of performance characteristics of oil burners and low-pressure heating boilers. By L. E. Seeley and E.J. Tavanlar. p. 419-29.

Estimating fuel consumption. By Paul D. Close. p. 433-39.

Fuel consumption (f) is equal to total estimated heat loss of building for entire heating season (L) divided by calorific value of fuel (C) and efficiency of utilization (E).

Ice & Coal Storage. Vol. XXXIV. No. 399. June, 1931.

Temperature-Entropy chart applied to refrigeration. By H.W.J. Smither  
p. 144-7.

Value of chart when applied to compound compression with different methods of interstage cooling.

The Implement and Machinery Review. Vol. 57, No. 675. July 1, 1931.

What the royal show is expected to reveal: Editorial. p. 299-300.

Tendencies in German agricultural engineering: Editorial. p 301.

Problems German agricultural engineers are tackling: Editorial. p. 301-2.

New "Alley" selective hoe. p. 306-7.

Implements and machinery at the Royal show. p. 313-335.

German agricultural engineering. Some striking new departures at the Hanover show. p. 336-342.

Implement & Tractor Trade Journal, June 20, 1931. Vol. XLVI, No. 13.

Good hay market calls for balers. p. 9

Though some progress is being made along other lines, conventional baling press still dominates handling of crop.

----- Vol.XLVI.No.14. July 4, 1931.

Planes as future farm machines. By Marion F. Taylor. p. 30.

Already proven practical for many operations their more general use awaits potential users and implement dealers



Combines in diversified sections: Governmental surveys shows acreage at which change from binders is profitable--outstanding for soy beans. p. 9

Results of this survey are important as well as interesting because its conclusions are largely applicable to diversified farming sections of Nebraska, Kansas, Dakotas, Missouri, as well as entire Corn Belt. Prominent among advantages of combine determined by survey, was reduction in amount of labor required, shortening of harvest and threshing periods and fact that it furnishes most satisfactory method of harvesting soy bean crop.

Industrial and Engineering Chemistry, Vol. 23, No. 7. July, 1931.

Recent developments in corrosion prevention of ferrous metals.

By V.V; Kendall and F. N. Speller. p. 735-42

Atmospheric Corrosion; Methods of testing corrosion; Underwater corrosion; Reconditioning of water pipes and water-cooling apparatus; Steam boiler problems; Soil Corrosion; Corrosion in the oil industry.

Irrigacion en Mexico, Revista Mensual. Vol. lll. Num. 2. Junio, 1931.

Problemas Forestales que Afectan a los Sistemas de Irrigacion.

By J. D. Garcia. p. 120-7.

Forestal problems which effect irrigation systems.

La Irrigation en Relacion con las Lluvias y Nubes. By Jose Ugalde. p. 151-6.(Continued)

Irrigation in connection with rainfall and clouds.

The Jersey Bulletin and Dairy World. June 24, 1931. Vol. L, No. 25.

Michael animal exerciser proves valuable. By Prof. Oscar Erf. p.1051,1073.

Journal of Agricultural Research, Vol. 42, No. 11. June 1, 1931.

Comparison of methods for determining the volume-weight of soils.

By Albert S. Curry. p. 765-772.

Paraffin-immersion method, being impractical here, was not considered in these tests. Comparisons were made between 1-foot cylinder method, rubber-tube method, viscous-fluid method, improved soil-tube method, and revised sand method.

----- Vol. 42, No. 12. June 15, 1931.

Dispersion of soils by a supersonic method. By L. B. Olmstead. p. 841-52.

Manufacturers Record, June 25, 1931. Vol. XCIX, No. 26.

Flood control and reclamation in Dallas County and City. p. 26-9.



How to make paper hothouses. By Clarence R. Brown. p. 399-400.

Much cheaper than hot-beds and we get a very strong thrifty plant without transplanting into cold frames. Another feature is that we have very little "damping" off of young plants.

Electric profits for truck farms. By Herbert Collin. p. 404-407.  
(Continued)

----- July 1, 1931. Vol. XLIX, No. 1.

Electric profits for truck farms. p. 424-6. By Herbert Collin.

Mechanical Engineering, July, 1931. Vol. 53, No. 7.

Research in Industry. By C.F. Hirshfeld. p. 498-502.

Engineering in its relation to the Interstate Commerce Commission.

By Frank McManamy. p. 503-9.

Creation, organization, and duties of commission--Work of its various bureaus, including services of engineers in valuation, analysis of expenditures for equipment, maintenance, and extensions; examination of specifications for locomotives, safety devices, etc.; determination of suitability of containers for transportation of explosives, etc.

Russian Engineer on American and German Technique. p. 510.

In regard to the Russian machinery industry, Perelman arrives at conclusions that it would not be suitable to copy blindly either American or German designs. It is preferable, he says, to draw on German technique whenever an inexpensive machine with economical use of materials is required, or when criterion is not simplicity of construction or application but technology of process for which machine is proposed. In this sphere are gas producers and purifiers, condensers and heat-transfer devices, driers, filters, etc. Further, in those forms of construction which depend upon thermodynamics, as, for instance, boilers, engines, compressors, and pumps, more can be expected from Germany, classical country of thermodynamics, than from America where German technique has been taken over in fully developed form. In order to acquire Americans' success in machinery industry, one should address himself not so much to their fundamental scientific methods as to their experience in mass production-- for example, in building of tractors, combines, and other complicated agricultural machinery, automobiles, electrical machinery, furniture, railroad cars, etc.

15,000-lb Booster Gas Compressor. By J. R. Dilley and W.L. Edwards.  
p. 511-13.

Particulars regarding a hyper compressor designed to operate with an inlet pressure of 3000 Lb. and a final discharge pressure of 15,000 lb. per sq. in., for use at the fixed-nitrogen research laboratory.

Work-world environments. By M. Luckiesh. p. 514-18.

Light and color fundamentally desirable and powerful influences upon happiness--color schemes for factory interiors and machinery--economic value of pleasant environments for workers.

The Montana Farmer, Vol. 18, No. 20. June 15, 1931.

Pumping water successfully for irrigation: Types of irrigation pumps for economical operation. p. 7.

Centrifugal pump, because of its cost and improved efficiency, has replaced practically all other types formerly used for irrigation. There are two general classifications of centrifugal pumps, horizontal - vertical last of which includes the deep well turbine. Horizontal centrifugal pump, that is, one shaft of which is in horizontal position, can be separated into two general types--single, or side, suction, and double-suction type. Single suction pump receives water at center line of shaft on only one side of impeller. This impeller may be of either open or enclosed type. Disadvantages are slow speed, which makes direct connection difficult; low efficiency, and no provisions made for replacement of worn parts, and piping must be torn down to inspect or repair interior parts. Advantages of enclosed impeller single suction type are low initial cost for belt drive; sturdy, wide range; impellers can be turned down to allow somewhat higher efficiency. Disadvantages are much same as for open impeller design. Double suction pumps receive water on both sides of impeller, which is usually of enclosed type. Advantages of double suction pumps are higher efficiency; higher speed suitable for direct connection to electric motor and gasoline engine power units; fair price; efficiency can be maintained; gives a wide range of capacity and heads; entirely reliable; are hydraulically balanced and economical to operate. Only disadvantages of suction pump is its cost, but this is not drawback in many cases, for if entire unit pump and driver are considered, it will be found less expensive, and if cost of operation is an item--and it usually is in irrigation work--this type of pump will invariably prove most economical to purchase.

New Jersey Agriculture, Vol. XIII, No. 7. July, 1931.

Surface and sub-surface irrigation. By C. H. Nissley. p. 6.

New Reclamation Era, Vol. 22, No. 5. May, 1931.

Gradual expansion of irrigated area not injurious to agriculture in nonirrigated sections. By John W. Haw. p. 95-6. (Continued on p.18)



(Continued from p. 17)

There is nothing static about agricultural production. It is as migratory as industry, shifting with exhaustion of fertility, population growth, ebb and flow of export demand, changing human food and clothing requirements, transportation facilities, and development in preservation and refrigeration. Close students of economic geography see in all these shifts necessity for at least modest program of expansion of our irrigated lands west of Continental Divide. It would seem far-sighted statesmanship for Government to adopt policy that would keep ahead of, certainly abreast of, demand for products which irrigated agriculture alone can produce and in step with development of its own natural west coast market.

Reason why federal reclamation should be continued. By Elwood Mead. p. 97.

Yearly crop values on reclamation projects now practically equal entire construction costs. Without irrigation these would be worthless unpeopled deserts. Actual repayment of money spent by Government will be completed on some of these projects in two years. It will be repaid on all now building within next 50 years. No investment of Government has brought to Nation larger social and economic return.

Morrison Canyon Siphon, Yakima Project, Washington Design, Construction and Deflection Tests. By Peter Bior. p. 100-4.

Northwest Farm Equipment Journal, Vol. XLV. No. 5. May, 1931.

Farm electrification makes great progress. p. 25.

Papee campaign on new hay chopper-silo filler begun. p. 26, 35.

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Vol. XLV. No. 6, June 1931.

The Electrical refrigeration is profitable. O. F. Stuefer. p. 19, 20

Combine gains new friends. By E. T. Leavitt. p. 26, 28.

It is estimated that 80,000 or more combines will be operating in at least 43 of our states and in most of provinces of Dominion this year to harvest 20 or more different crops.

The Oregon Farmer, May 28, 1931. Vol. LII, No. 22.

Peat soils are studied. By W. L. Powers. p. 5.

1. Tule and sedge peat from Klamath marshes.
2. Woody-sedge peat (a) from Lake Labish and (b) from Wapato lake, in subhumid Willamette valley.
3. Sedge, acid muck from near Clatskanie.
4. The fourth kind of peat is brown, acid soil from near Astoria, the Coast.

New source of power from the sea? By M.F. Knoy. p. 879-80.

M. C. Raveau, French scientist, proposed using difference in vapor tension of fresh and salt water to generate power at mouths of rivers.

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June 9, 1931. Vol.73, no.23.

Dayton adds to central heating. By J.G. Butterworth. p. 906-8.

New central heating plant is equipped with underfeed-stoker-fired boiler using combustion air preheated to 390 deg. Well water for boiler feed is treated in lime-and-soda hot-process system supplemented by phosphate. Skip hoist and tram car handle coal. Dump cars and skip hoist dispose of ash.

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June 16, 1931. Vol.73, no.24.

Building heating with refrigeration equipment. p. 948-9.

New office building of Southern California Edison Company. Ltd., claims distinction of being first all electrically operated building of its kind. In addition to resistance-type electric heating units, winter heating of building has been provided for by special arrangement of refrigerating plant, which in summer is used for air-conditioning purposes.

Insulation specifications and economical thickness. By E.F. Zeiner. p. 957-60.

In determining economic thickness of heat insulation two methods have usually been used. One method chooses thickness that gives the lowest annual operating expense, and other chooses thickness so that last increment of thickness pays required minimum return on additional cost.

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June 23, 1931. Vol.73, no.25.

Refrigeration problems solved without involved calculations. By John E. Starr. p. 993-4.

Careful and elaborate tables prepared by United States Bureau of Standards.

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July 7, 1931. Vol.74, no.1

A.S.M.E. and A.S.T.M. seek better metals for high temperatures. p. 25-7.

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July 21, 1931. Vol.74, no.3.

Corrosion: What it is. By W.S. Johnston. p. 87-9.

It has been conservatively estimated that loss through corrosion of iron and steel annually requires replacement of about two per cent of entire tonnage of these two metals in service. As such it represents drain upon our natural resources of iron ore. While corrosion has been considered simple chemical reaction, unfortunately all of factors involved in process are not understood very well.. Corrosion is natural phenomenon of disintegration occasioned by one substance reacting chemically upon another for which it, or one of its components, has an affinity.



Significance of alkalinity in embrittlement studies. Part 1.

By Max Hecht and D.S.McKenney. p.602-4.

Brine race systems for freezing ice. By Terry Mitchell p.618.

Demand for more efficient coils, what has been termed-Brine Race System, with special evaporator made up of pipes and named Vertiflow unit, has been developed within recent years. Race extends across tank, usually at end, and forms restricted space through which brine can be made to flow rapidly without giving it such excessive motion throughout rest of tank that level would vary objectionably. Race is short and is open at top, so that friction is reduced, and horsepower required for agitation is kept within good limits. Agitation is improved by use of Aciflow impellor blade and special housing inside of which are guide vanes to reduce churning: this agitator resembles in principle, low head pumps employed in irrigation work. Agitator may be either vertical or horizontal. Race-ways can be built into tank at one or both ends, or in center, just as it is practiced with submerged brine coolers. Race System adapts itself admirably to float ammonia feed, dual-pressure operation, or complete automatic control. Vertiflow Unit is designed to provide series of short inclined pipes, through which gas can be rapidly liberated, and which can take full advantage of faster flow of brine set up in Race.

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Vol. XXXV, no.12.

June 15, 1931.

Significance of alkalinity in embrittlement studies. Part II.

By Max Hecht and D.S.McKenney. p.649-52.

Prairie Farmer. Vol.103, no.20. May-16, 1931.

Lower production costs on one-man farms: Specially designed machinery gives them increased efficiency. p.3,10.

Public Roads. Vol. 12, no.3. May, 1931.

Action of sulphate water on concrete: Recent tests of specimens immersed in Medicine Lake, S.Dak. Reported by Dalton G.Miller and Philip W.Manson. p.64-87. Experiments were designed principally to aid in general improvement of farm drain tile and particularly to develop tile that will endure under wide range of soil conditions peculiar to Minnesota. Results are applicable, however, to many other sections of United States and to concrete culvert, water, and sewer pipe exposed to action of sulphate soils and waters similar to those to which drain tile are subjected.

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Vol. 12, no.4.

June, 1931.

Subgrade soil constants, their significance, and their application in practice. By C.A.Hogentogler, A.M.Wintemeyer and E.A.Willis.

Part I: Physical properties of soils and their effect on subgrade performance. p.89-108,116.

Method of computing machinery costs. By E.C.Sauve. p.187-190.

Selecting electric motor for pumping water. By W.H.Sheldon.  
p.190-4.

Refrigerating Engineering. July 1931. Vol.22, no.1.

Aluminum foil as basis of insultation. By Max Breitung. p.11-14.

Refrigeration. May, 1931. Vol.49, no.5.

"Dry-Ice" as transport refrigerant, with special reference to roll  
of CO2 in augmenting truck body insulation. By C.L.Jones.  
p.28,29,40.

Rural Electrification and Electro-farming. Vol.VI, no.70. March 1931.

Mole draining demonstration. p.294. In one field main  
drains consisted of (1) ditch which had been dug in order that  
pipes might be laid in it, and (2) four-inch drain drawn by  
Cable mole-draining outfits. Subsidiaries were drawn from ditch  
in that part of field which it served, and across four-inch  
drain where that acted as main drain. In next field ditch to  
accommodate pipe main was cut by means of excavator and drains  
were drawn from it. Main drains were about 21 inches deep and  
subsidiaries about 15 inches.

New coating for iron roofing. p.296. "Must" is stated  
to be liquified lead which has been subjected with other  
substances to extremely high temperature. Resulting product  
is mixed with best linseed oil so that actual substance may be  
regarded as colloidal lead in suspension in linseed oil, oil  
being used as conveyor by which lead in suspension can be used  
to coat any substance.

Ultra-violet ray treatment. p.314.

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Vol. VI, no.71. April 1931.

Importance of electrical development to countryside. By R.Borlase  
Matthews. p.329-330. Weakness of National  
Electricity Grid--627,105 electrified farms in U.S.A.--3,500  
British farmers use electricity; Why not 350,000? 1 1/2 million  
farms in world using electricity--migration of townsman back  
to land.

Agricultural machinery: The Paris show. p.338-40.



Useful farm machine. p. 361. 362.

"Law Block" machine for grinding, pulping, oil cake crushing and root cutting.

Electrical exhibits at the Bath and West Counties show. p. 370-79

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Vol. VII, No. 73. June, 1931.

Crop curing and haulage. p. 24-6.

One unit consumed for two hundredweight of crops cured--  
Comparative costs favour the modern way--Richer produce.

Refrigerating World. June, 1931. Vol. 66, No. 6.

How to use the ammonia tables. By Clifford L. Holske. p. 10-14, 16.

Insulating value of building walls. p. 16-17.

Table shows heat conductivity of masonry walls containing normal amount of moisture.

Science News Letter. July 18, 1931. Vol. 20, No. 536.

Tides yield continuous power in English experimental plant: Unique storage method in which water is heated by friction supplies energy at flood tide. p. 35

Soil Science. Vol. XXXII. No. 1. July, 1931.

Effect of dilution on the pH of soils treated with various cations. p. 1-8. By Alfred T. Perkins and H.H. King.

Effect of various sources of organic matter on the properties of soils as determined by physical measurements and plant growth. By H.B. Sprague and J.F. Marrero. p. 35-47.

Improved soil sampling tube. By Horace J. Harper. p. 65-8.

Southern Power Journal. June, 1931. Vol. 49, No. 6.

Rust in brine tanks and its prevention. By R.M. Moffatt. p. 55-6.

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July, 1931. Vol. 49, No. 7.

Refrigeration applied to air conditioning. By A. N. Chandler. p. 35-9.

Air conditioning may be defined as science of controlling temperature, humidity and cleanliness of air within given enclosure. To secure a definite temperature and humidity, refrigeration is applied in various manners. Any air conditioning problem consists of changing physical state of given volume or weight of air from one temperature and one moisture content to another, or, as in many cases, changing both conditions at same time.

Trend in Hydro Design. By G.R. Strandberg. p. 446-52.

Cofferdamming the Columbia at Rock Island--a Real Construction Battle.  
p. 472-9.

River bottom sounded in sub-zero weather--timber cribs held and  
sunk in 15-M.P.H. stream--unwatering 25 acres in five days proves  
work effective.

Die Technik in der Landwirtschaft. Vol. 12, No. 6. June 1931.

Die Verbilligung der Getreideernte und der Etziner Schlagdrusch.

By Von Ernst Zander. p. 173-9. Reduction of cost of crops and  
Etziner threshing machine.

Vergleichende Untersuchungen verschiedener Ernteverfahren.

By Von Werner Leppin. p. 187-93. Comparative investigation of  
different methods of handling crops.

The Utah Farmer. July 15, 1931. Vol. 25, No. 1.

Orchard irrigation and cultivation in this dry season. By Francis M.  
Coe and O. W. Israelsen. p. 4, 12.

The Water Tower. Vol. XVII, No. 11. July, 1931.

3000-ton steel tanks used for cottonseed storage, p. 5.

Recent installations have self-supporting dome roof.

Design of circular girders. By D.E. Larson. p. 6.

Water Works & Sewerage. Vol. LXXVIII. No. 6. June 1931.

The Colorado River Aqueduct: An outline of plan for making portion  
of water of Colorado River, conserved by Hoover Dam, available  
to Los Angeles and her sister cities of southwest. By Julian Hinds.  
p. 157-60.

Water treatment and purification problems discussed at the Pittsburgh  
convention of the American Water Works Association. p. 161-5.

The Western Farm Life. Vol. XXXIII, No. 11. June 1, 1931.

Use of self-feeder for fattening hogs pays: Method gaining in favor  
and is not indication of laziness. By Elmer J. Johnson. p.3, 23

Pump irrigation increases in Colorado. p. 22.

Vol. XXXIII, No. 12. June 15, 1931.

Implements for use on the plains farm: Must have proper tools to  
make the most of limited moisture. By E.R. Parsons. p.4, 14



Farm water supply is a critical issue: Hauling water necessary in some sections and pollution is constant danger. p. 3, 30.

Rural electrification spreads. p. 8.

Chief obstacle in way of even more rapid extension of central station electric service to farms and rural districts, is financial. According to best data obtainable there are now approximately 650,000 farms being supplied with central station electric service or little more than 10 per cent of all farms in United States. One single system, as of November 30, 1930, was serving 89,876 rural customers, of which something more than 70,000 are actual farmers. The increase in number of rural customers during the 12 months ending November 30, 1930, was 27.3 per cent over the previous 12 months.

Electric power on farms rapidly increasing. p. 12.

In Ohio about 45 per cent of all farms are electrified, about 50,000 having central station power and practically same number individual plants.

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Vol. LIX, No. 19. May 9, 1931.

Electric soil tool under experiment. p. 10.

New device intended to eradicate weeds and perform other valuable soil services by an electric method. Inventor, E. Weir. Some of things such tool might do are fertilizing soil, destroying noxious weeds, seeds, bugs and germs to depth of six inches in soil surface, and purifying "sick" soils to some extent.

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Vol. LIX, No. 20. May 16, 1931.

Mulch paper reduces production costs, Cherry orchardists in Door County so declare. p.3, 10, 11.

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Vol. LIX, No. 24. June 13, 1931.

Operating a four-thousand-acre farm. The place is thoroughly mechanized and man labor reduced to a minimum. p. 3.

Equipment for practically all kinds of farm work is being improved so rapidly, and improved machinery is being generally adopted, which means that farming is gradually being put on basis with factory efficiency as to overhead, cutting of labor costs, etc. In other words idea is to get maximum production with minimum cost and effort.

The Library has just received the following publications:

- Agricultural Engineering Research and the Engineering Experiment Stations. By R.W. Trullinger. 1931. 9 p. mim. Agricultural engineering consists of application of civil mechanical, electrical, and chemical engineering principles, and certain physical and physico-chemical phenomena to agricultural operations and practices. Its purpose is to introduce efficiency and economy into agricultural industry.
- Use of agricultural machinery in Canada and the United States of America. Report by Thomas Baxter, George Clarke and J. E. Newman. Great Britain Ministry of Agriculture and Fisheries. Bul. No. 27. 1931. 38 p.
- All-night light for layers. By D.C. Kennard and V.D. Chamberlain. Bul. 476. 1931. 22 p. Ohio Agr. Expt. Sta.
- Transactions of the American Society of Agricultural Engineers. 1929. 115 p. Vol. 23. Pt. 1- Power and machinery. Pt. 2- Rural electrification. Pt. 3- Structures. Pt. 4- Land reclamation.
- American society of heating and ventilating engineers. Guide. 1931. 931 p.
- American society of mechanical engineers. Rules for construction of unfired pressure vessels. 1930. 70 p.
- Better sugar-beet culture for Utah. By George Stewart and D.W. Pittman. 1931. 32 p. Utah Agr. Expt. Sta. Circ. No. 93.
- California: An index to the State sources of agricultural statistics. Part IV.-Land, Farm property, irrigation, and miscellaneous items: An index to the official sources. 1931. 128 p. mim. U. S. Department of Agriculture, Bureau of Agricultural Economics. Agricultural Economics Bibliography No. 31 Part IV.
- Care and repair of the house including minor improvements by Vincent B. Phelan. U.S. Bureau of Standards. Building and Housing Publication BHL5. 1931. 131 p.
- Study of the induction motor. By F.T. Chapman. N.Y. John Wiley & sons, Inc., 1930. 289 p.



The Library has just received the following publications: Continued

China. Huai River Commission. Bureau of Engineering.

Projects of flood control. Navigation and irrigation for Huai river system. Huai-Yin, China. 1930. 134 p. (Official technical report No. 1) English and Chinese.

Comparison of methods for determining the volume-weight of soils.

By Albert S. Curry. Reprinted from Journal of Agricultural Research, Vol. 42, No. 11. 1931. p. 765-772.

Contractors Pump Standards. Adopted by the Contractors Pump

Manufacturers Bureau, April 16, 1931. Approved by the Associated General Contractors of America, May 8, 1931. 1 p.

Control and Conservation of Flood Waters in Orange County, California.

Report to Board of Supervisors, Orange County Flood Control District. April, 1931. 50 p.

Cost of pumping and duty of water for rice on the Grand Prairie of

Arkansas. By B. S. Clayton. Bul. No. 261. 1931. 48 p. Arkansas Agri. Expt. Sta.

Cotton Production in Missouri. 1931. 34 p. Missouri Agr. Expt. Sta.

Bul. 299. By B.M. King.

Agricultural Machinery. By J.B. Davidson. N.Y., John Wiley & Sons, Inc., 1931. 396 p.

Determination of soil moisture by the method of multiple electrodes.

1931. 20 p. Texas Agri. Expt. Sta. Bul. No. 426. W.H. McCorklo.

Drainage and improvement of wet land.(Revision of Circular 83) By

W.L. Powers. 1931. 19 p. Oregon Agr. Expt. Sta. Circular No. 102.

Durability and strength of bond between mortar and brick. By L. A.

Palmer and J. V. Hall. 1931. 473-492 p. (U.S. Bureau of Standards Research Paper No. 290. Reprint from Bureau of Standards Journal of Research Vol. 6, March, 1931)

Electric wiring for the farm. By F.B. Wright and B.B. Robb. 1931.

122 p. Cornell Ext. Bul. No. 204. N.Y. State College of Agriculture.

Electricity and the agriculture of the next ten years. By E.A.White.

20 p. mime. (To be delivered at the twenty-fifth annual meeting American Society of Agricultural Engineers, Ames, Iowa, June 25, 1931.)

The Library has just received the following publications: Continued

- Experimental studies on the production of insulating board from cornstalks. By O.R. Sweeney, Charles E. Hartford, Jr., Roger W. Richardson and Edward R. Whittemore. 1931. 64 p. (Iowa Eng. Expt Sta. Bul. 102.)
- Explanation of American lumber standards. By C. V. Sweet. 1931. 9 p.
- Farm grinding of grain and forage. By F.C. Fenton and C.A. Logan. 1931. 48 p. (Kansas Eng. Expt. Sta. Bul. No. 27)
- Farm Implement News Company. Tractor field book with power farm equipment specifications. 1931 Chicago, Ill., 186 p.  
A compilation of facts and information of value to those who make, sell or use equipment used in power farming.
- Fertilizers for cash crops. Circular 243. 1931. 39 p., (Extension Service of The College of Agriculture, University of Wisconsin. By F.L. Musbach and C.J. Chapman.
- Grade and staple of South Carolina's 1930 Cotton Crop. By Harry A. White. 1931. 15 p. Circular 47. (South Carolina Agr. Expt. Sta. In cooperation with U.S. Dept of Agriculture, Bureau of Agricultural Economics.
- Harvesting small grain, soybeans, and clover in the corn belt with combines and binders. By L.A. Reynoldson and J.H. Martin. J.R. Humphries. 1931. 54 p. Tech. Bul. No. 244. (U.S. Dept. of Agriculture, Washington, D.C. In Cooperation with Agricultural Experiment Stations of Illinois and Indiana.
- Treatise on leather belting. By G. B. Haven and G. W. Swett. First edition, 249 p. 1931. Cambridge, Mass., Technical Composition Company.
- Heat transfer through building walls. By M.S. VanDusen and J.L. Finck. 1931. 493-522 p. (U.S. Bureau of Standards Research Paper No. 291. Reprint from Bureau of Standards Journal of Research Vol. 6, March. 1931)
- Heat transfer through metal-inclosed insulation. By M. S. Van Dusen. 1930. 385-397 p. (U.S. Bureau of Standards Research Paper No. 207. Reprint from Bureau of Standards Journal of Research Vol. 5, August, 1930.)
- Housing Farm Poultry. Circular No. 107. 1931. 30 p., (second revision) University of Kentucky. By J.B. Kelley and J. Holmes Martin.



The Library has just received the following publications: Continued

- How to use Ohio coal in school heating plants. By H.M. Faust. 1931. 18 p. Issued in cooperation with Ohio Department of Education, Ohio Department of Industrial Relations and Ohio Coal Investigation Committee. Ohio Eng. Expt. Sta. Circ. No. 23.
- India Madras Presidency. Public Works Department. Administration report, 1929-30. Pt. 2- Irrigation. 1931. 458 p.
- International Harvester Company. I.H.C. farm booklets. Chicago, Ill. 1921 - 1931. 2 V.
- Irrigation Districts their organization, operation and financing. By Wells A. Hutchins. 1931. 94 p. Tech. Bul. No. 254. U.S. Department of Agriculture.
- Timber design and construction. By H.S. Jacoby and R.P. Davis. 2nd ed. N.Y. John Wiley & sons, Inc., 1930. 334 p.
- Jones, F. D. Ed.  
Ingenuous mechanisms for designers and inventors. Illustrated descriptions of a large variety of standard and special mechanisms selected by experienced machine designers as outstanding examples of ingenious mechanical movements for use in designing automatic machines and other mechanical devices. N.Y. Industrial Press. C. 1930. 536 p.
- Physical properties of the soil. By B.A. Keen. London, Longmans, Green and Co., 1931. 380 p.
- Text-book of illumination. By W. Kunerth. N.Y. John Wiley & sons, Inc., 1909. 269 p.
- Laws relating to agriculture. By Elmer A. Lewis. 270 p. U.S. Gov. Print. Off. Washington, D.C. 1931.
- Century of the reaper. An account of Cyrus Hall McCormick, inventor of reaper; of McCormick harvesting machine company; business he created; and of International Harvester Company, his heir and chief memorial. Boston, Houghton Mifflin Co. 1931. 307 p.
- Manufacture and sale of farm equipment and related products: 1930. U.S. Department of Commerce, Bureau of Census, 1931. 7 p. mim.
- Method of determining volume and tonnage of haystacks. By W.H. Hosterman. U.S. Dept. of Agr. Tech. Bul. No. 239. 1931. 35 p. (In cooperation with Agricultural Experiment Stations of California, Colorado, Idaho, Minnesota, Montana, Nebraska, Nevada, Oregon, South Dakota, and Utah)

The Library has just received the following publications: Continued

Milk Houses. By Dana H. Bailey and John R. Haswell. Circular 139. 1931. 12 p. (Penn. State College School of Agriculture and Experiment Station Division of Agricultural Extension.)

Milk products waste treatment. Report No. 3. By E.F. Eldridge. Bul. No. 36. 1931. 35 p. (Michigan Eng. Expt. Sta.)

Meters for farm equipment studies. National Rural Electric Project. Report No. 4. 1931. 1 p.

More and better potatoes. By W.B. Ward, C.T. Gregory and H.K. Riley. Extension Bul. No. 89. (Third revised edition) 1931. 28 p. (Purdue Univ. Dept. of Agricultural Extension)

Meadow Reclamation Commission Report. N. J. 1930. 76 p.

Hints to Poultrymen. 1931 modification of plans for the New Jersey multiple unit laying house. By Willard C. Thompson, Leslie M. Black, and E.R. Gross. Vol. 19, No. 8. 1931. 4 p. (N.J. Agr. Expt. Sta.)

Heat Power. By E.B. Norris, and E. Therkelsen. N.Y. McGraw-Hill Book Company, Inc., 1930. 376 p.

Ohio Water Supplies, with particular reference to the drought of 1930. (Supplement to Vol. III, No. 3.) 1931. 63 p.  
Water purification. By John C. Prior  
Farm Water Supply. By H.C. Ramsower and Virgil Overholt.  
Ground Waters of Ohio. By Wilber Stout.  
(Ohio Eng. Expt. Sta. News.)

Organic compounds associated with base exchange reactions in soils. By W. T. McGeorge. 1931. 215-251 p. Arizona Agr. Expt. Sta. Tech. Bul No. 31.

Partial list of references on the use of explosives in the settlement of fills. Bibliography. 1931. 3 p. typewritten. U.S. Bureau of Public Roads Library.

English plough. By J.B. Passmore. London, Humphrey Milford, Oxford University Press, 1930. 84 p.

Permanent repairs on the farm. . 15 p. Portland Cement Association.

Plans and List of materials for the New Jersey multiple unit laying house 1931 modification. By Willard C. Thompson, Leslie M. Black, and E.R. Gross. Vol. 19, No. 9. Hints to Poultrymen. 1931. 4 p. N.J. Agr. Expt. Sta.



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Power Plant Engineering:

- Boiler plant operation. 1930. 165 p.
- Distribution and use of electricity. 1930. 112 p.
- Feedwater condensers cooling equipment. 1930. 112 p.
- Piping systems for power and industry. 1930. 103 p.
- Pumps in power plants and industry. 1930. 96 p.
- Selecting and operating electrical equipment. 1930. 112 p.
- Steam turbines and their operation. 1930. 104 p.

Prevention of wind and fire losses to farm buildings. By Henry Giese.  
Circ. No. 127. 1931. 23 p. (Iowa Agr. Expt. Sta.)

Profitable potato spraying. 1931. 18 p. (Penn. State College School  
of Agriculture and Experiment Station Division of Agricultural  
Extension) By L. T. Denniston and H.E. Hodgkiss. Circ. 137.

---Quarter horsepower portable motor on the farm. Report No. 3.  
1931. 8 p. (National Rural Electric Project)

Red Wing Project on Utilization of Electricity in Agriculture.  
By E.A. Stewart, J.M. Larson, and J. Romness. 1930. 153 p.  
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